

ABSTRACT OF THE DISCLOSURE

Disclosed are a multi-component fiber, fiber-containing (e.g., fibrous) material made of multi-component fibers, and methods of forming the fiber-containing material. The fiber-containing material is made of a plurality of multi-component fibers of at least first and second segments. The first and second segments are respectively made of different polymer materials having a high melt temperature and a low melt temperature relative to each other, and the first and second segments are splittable from each other. The fiber-containing material is made by collecting a plurality of the multi-component fibers, splitting the first and second segments from each other, and thermally bonding the fibers by melting the lower melt temperature polymer material of the first segments or second segments. The melted polymer material encapsulates cross-over points of remaining segments, of higher melt temperature polymer material, to act as a binder for the fiber-containing material. The fiber-containing material formed can be, e.g., a yarn, web or fabric, and can have improved strength and softness. According to another aspect of the present invention, a multi-component fiber is made of at least first and second segments which can be split from each other and which are respectively made of different polymer materials having different melt temperatures, a difference in melt temperature between the polymer materials of the first and second segments being, e.g., at least 100°C.